

What is claimed is:

1. A composition for planarizing or polishing a surface comprising (a) a liquid carrier, and (b) solids comprising about 10-95 wt. % solid abrasive particles, and about 0.1 wt. % to about 90 wt. % of purified sodium-containing clay particles, based on the total weight of solids in the composition, said clay particles having a particle size such that at least 90% of the particles (by number), when slurried in water, have a particle size in the range of about 0.002 μ m to about 20 μ m.
2. The composition of claim 1 wherein the clay particles comprise a smectite clay.
3. The composition of claim 2, wherein the clay particles are selected from sodium montmorillonite, sodium bentonite or a combination thereof.
4. The composition of claim 1, wherein the composition is a slurry including a liquid carrier, and solids are present in the slurry composition in an amount of about 0.1 to about 40 wt. % of the composition.
5. The composition of claim 3, wherein the carrier is water.
6. The composition of claim 2, further including a chemical accelerator selected from a peroxide, a sulfate, a persulfate, or a nitrate.
7. The composition of claim 6, wherein the a chemical accelerator is selected from the group consisting of hydrogen peroxide, ammonium persulfate, iron (III) nitrate, and hydroxylamine nitrate.
8. The composition of claim 1, wherein the clay is selected from the group consisting of a smectite clay; a kaolinite clay; a serpentine clay; a Pyrophyllite clay; talc, mica, and a synthetic clay.
9. The composition of claim 8, wherein the clay is selected from the group consisting of Beidellite; Nontsonite; Volkonskoite; Saponite; Hectorite; Halloysite; Kaolin; Serpentine clays, such as Lizardite; Amesite; Chrysotile; Pyrophyllite; Talc; Illite; Vermiculite; a synthetic smectite; Japonite; and a combination thereof.

10. The composition of claim 1, wherein the clay is any clay except for kaolin and diatomite.
11. The composition of claim 1; wherein the clay has a particle size in the range of about 0.02 μ m to about 10 μ m.
12. The composition of claim 11, wherein the clay has a particle size in the range of about 0.05 μ m to about 5 μ m.
13. The composition of claim 12, wherein the clay has a particle size in the range of about 0.1 μ m to about 4 μ m.
14. A method of planarizing or polishing a surface comprising contacting a surface with a composition comprising (a) a liquid carrier, (b) abrasive solids; and (c) 0.1 wt. % to about 90 wt. % of sodium-containing smectite clay particles, based on the total weight of solids in the composition, wherein about 90% or more of the clay particles (by number) have a particle size in the range of about .02 μ m to about 20 μ m.
15. The method of claim 14, wherein the surface is a memory disk, or a rigid disk surface comprising NiP, glass, ceramic, or a glass/ceramic material.
16. The method of claim 14, wherein the composition further includes a chemical accelerator selected from a peroxide, a sulfate, a persulfate or a nitrate.
17. The method of claim 14, wherein the chemical accelerator is selected from the group consisting of hydrogen peroxide, ammonium persulfate, iron (III) nitrate, and hydroxylamine nitrate.
18. The method of claim 14, wherein the smectite clay has a particle size in the range of about 0.02 μ m to about 10 μ m, when slurried in water.
19. The method of claim 18, wherein the smectite clay has a particle size in the range of about 0.05 μ m to about 5 μ m, when slurried in water.

20. The method of claim 19, wherein the ion-exchanged smectite clay has a particle size in the range of about 0.1 μ m to about 4 μ m, when slurried in water.